

-40-

What is claimed is:

CLAIMS

1. A method of producing a tamper-resistant authentication mark on a product or product package, the method comprising acts of:
applying one or more light-sensitive compounds to the product or product package to produce an authentication mark; and
thereafter applying a sealer over the mark in a manner to isolate the mark and without mixing the sealer with the one or more light-sensitive compounds.
2. The method according to claim 1, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying at least two light-sensitive compounds to the product or product package.
3. The method according to claim 1, wherein the act of applying one or more light-sensitive compounds to the product or product package to produce an authentication mark comprises an act of applying one or more light-sensitive compounds to the product or product package with a continuous ink jet printer.
4. The method according to claim 1, wherein the act of applying a sealer over the mark comprises an act of spraying a liquid sealer over the mark.
5. The method according to claim 1, further comprising an act of curing the sealer.
6. The method according to claim 5, wherein the act of applying a sealer over the mark comprises an act of applying a UV curable sealer over the mark, the method further comprising an act of curing the sealer with UV light.
7. The method according to claim 1, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying one or more non-UV light-sensitive compounds to the product or product package.

8. The method according to claim 1, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying one or more IR light-sensitive compounds to the product or product package.

9. The method according to claim 1, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying one or more near IR light-sensitive compounds to the product or product package.

10. The method according to claim 1, wherein the acts of applying one or more light-sensitive compounds to the product or product package and thereafter applying a sealer over the mark each occurs at a speed commensurate with a speed at which the product is being produced or at which the product is being packaged.

11. The method according to claim 1, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying one or more light-sensitive compounds to a product package after a product is packaged within the product package.

12. The method according to claim 1, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying an ink having the one or more light-sensitive compounds disposed therein to the product or product package.

13. A product or product package having the mark produced with the method of claim 1.

14. The product or product package according to claim 13, wherein the product or product package is formed of plastic.

15. The product or product package according to claim 14, wherein the product or product package is formed as a bottle.

16. The product or product package according to claim 15, wherein the product or product package is formed as a shampoo bottle.

17. A tamper-resistant authentication mark produced with the method of claim 1.

18. The tamper-resistant authentication mark according to claim 17, wherein the mark is invisible to the naked eye.

19. The tamper-resistant authentication mark according to claim 17, wherein the mark is resistant to a solution, with the solution being selected from the group consisting essentially of water, ethanol, acetone, and methyl ethyl ketone.

20. A method of producing a tamper-resistant authentication mark on a product or product package, the method comprising acts of:

applying one or more light-sensitive compounds to the product or product package to produce an authentication mark, with the one or more light-sensitive compounds comprising a non-UV light-sensitive compound; and

applying a sealer within or over the mark.

21. The method according to claim 20, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying at least two light-sensitive compounds to the product or product package.

22. The method according to claim 20, wherein the act of applying one or more light-sensitive compounds to the product or product package to produce an authentication mark comprises an act of applying one or more light-sensitive compounds to the product or product package with a continuous ink jet printer.

23. The method according to claim 20, wherein the act of applying a sealer comprises an act of mixing the sealer with the one or more light-sensitive compounds.

24. The method according to claim 20, further comprising an act of curing the sealer.

25. The method according to claim 24, wherein the act of applying a sealer within or over the mark comprises an act of applying a UV curable sealer within or over the mark, the method further comprising an act of curing the sealer with UV light.

26. The method according to claim 20, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying one or more IR light-sensitive compounds to the product or product package.

27. The method according to claim 20, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying one or more near IR light-sensitive compounds to the product or product package.

28. The method according to claim 20, wherein the acts of applying one or more light-sensitive compounds to the product or product package and thereafter applying a sealer over the mark each occurs at a speed commensurate with a speed at which the product is being produced or at which the product is being packaged.

29. The method according to claim 20, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying one or more light-sensitive compounds to a product package after a product is packaged within the product package.

30. The method according to claim 20, wherein the act of applying one or more light-sensitive compounds to the product or product package comprises an act of applying an ink having the one or more light-sensitive compounds disposed therein to the product or product package.

31. A product or product package having the mark produced with the method of claim 20.

32. The product or product package according to claim 31, wherein the product or product package is formed of plastic.

33. The product or product package according to claim 32, wherein the product or product package is formed as a bottle.

34. The product or product package according to claim 33, wherein the product or product package is formed as a shampoo bottle.

35. A tamper-resistant authentication mark produced with the method of claim 20.

36. The tamper-resistant authentication mark according to claim 35, wherein the mark is invisible to the naked eye.

37. The tamper-resistant authentication mark according to claim 35, wherein the mark is resistant to a solution, with the solution being selected from the group consisting essentially of water, ethanol, acetone, and methyl ethyl ketone.

38. A method of producing a tamper-resistant authentication mark on a product or product package, the method comprising acts of:

applying an ink having one or more light-sensitive compounds to the product or product package to produce an authentication mark, with the one or more light-sensitive compounds comprising an IR or near IR light-sensitive compound;

applying a UV-curable overcoat over the mark; and

curing the overcoat with UV light.

39. The method according to claim 38, wherein the act of applying an ink having one or more light-sensitive compounds to the product or product package comprises an act of applying an ink having at least two light-sensitive compounds to the product or product package.

40. The method according to claim 38, wherein the act of applying an ink having one or more light-sensitive compounds to the product or product package comprises an act of applying an ink having one or more light-sensitive compounds to the product or product package with a continuous ink jet printer.

41. The method according to claim 38, wherein the act of applying a UV-curable overcoat over the mark comprises an act of spraying a liquid UV-curable overcoat over the mark.

42. The method according to claim 38, wherein the acts of applying an ink having one or more light-sensitive compounds to the product or product package and thereafter applying an overcoat over the mark each occurs at a speed commensurate with a speed at which the product is being produced or at which the product is being packaged.

43. The method according to claim 38, wherein the act of applying an ink having one or more light-sensitive compounds to the product or product package comprises the acts of applying an ink having one or more light-sensitive compounds to a product package after a product is packaged within the product package.

44. A product or product package having the mark produced with the method of claim 38.

45. The product or product package according to claim 44, wherein the product or product package is formed of plastic.

46. The product or product package according to claim 45, wherein the product or product package is formed as a bottle.

47. The product or product package according to claim 46, wherein the product or product package is formed as a shampoo bottle.

48. A tamper-resistant authentication mark produced with the method of claim 38.

-46-

49. The tamper-resistant authentication mark according to claim 48, wherein the mark is resistant to a solution, with the solution being selected from the group consisting essentially of water, ethanol, acetone, and methyl ethyl ketone.